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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|-------------------|
| 10/517,984 | 06/24/2005 | Shmuel Yariv | 030231-0154 | 1945 |
| 22428 | 7590 | 11/13/2006 | EXAMINER | |
| FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007 | | | | ABU-ALI, SHUANGYI |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1755 | |

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding..

| Office Action Summary | Application No. | Applicant(s) | |
|------------------------------|------------------------|---------------------|--|
| | 10/517,984 | YARIV ET AL. | |
| Examiner | Art Unit | | |
| Shuangyi Abu-Ali | 1755 | | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 24 June 2005.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-3 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-3 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/15/2004.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
5) Notice of Informal Patent Application
6) Other: ____.

DETAILED ACTION

(1)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over by U.S. Patent No. 5,997,628 to Bindra, and further in view of GB No. 665,474 to Dehn.

Bindra discloses a procedure to make azo pigment composition as described as following (col.5, lines 26-30):

- 1) Dissolving an aromatic amine such as aniline in hydrochloric acid to form phenylamine hydrochloride;
- 2) Adding sodium nitrite into the phenylamine hydrochloride solution to form a benzenediazonium chloride compound; and
- 3) Reacting the diazonium compound with an aromatic coupling agent to form an azo dye compound.

Bindra also discloses that the order of adding diazonium compound into coupling compound or adding coupling compound to diazonium compound in the purpose of making azo dye can be varied (col. 6, lines 27-30).

Although Bindra suggests in his disclosure that the reactions are preferably carried out in the presence of a clay material (col.6, lines 58-63). He does not specifically disclose that the azo dye is obtained in the interlayer space of a smectite clay material.

Nonetheless, it would have been obvious to one of ordinary skill in the art at the time of invention that the azo-dyes produced by Bindra would be obtained within interlayer spaces of the clay motivated by the fact that Dehn, also drawn to methods for the formation of pigment/clay complexes, disclose that lamellar smectite-type clays, such as montmorillonite, hectorite, saponite, etc, are capable of supporting the

chemical complex of organic species, such as aniline-based dyes in the interlayer spaces of their structure(page1, lines 19-32; page 2, lines 3-4).

(2)

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bindra and Dehn, as set forth in section (1), and further in view of U. S. Patent No. 4,033,945 to Bauer et al.

Bindra, as combined above, disclose that the aromatic coupling agent may comprise 1- (3'-sulfophenyl)-3-methyl-5-pyrazolone (col. 8, line 24). Bindra, however, does not specifically disclose the use of those species set forth in applicant claim 3.

Nonetheless, It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to use 2-hydroxy-naphthalene as coupling agent, motivated by the fact that Bauer et al. also drawn to methods for the formation of azo dyes, disclose that 2-hydroxy-naphthalene is a suitable coupling agent for use in obtaining an azo dye compound from aniline derivatives in an acid environment (col.9, line 10).

(3)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Such prior art includes reference A-B and D-E listed on Form PTO-892.A

Art Unit: 1755

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuangyi Abu-Ali whose telephone number is 571-272-6453. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SA

J. LORENZO
SUPERVISORY PATENT EXAMINER